

Remarks

The Applicants have cancelled Claims 10-17 and 19. Thus, Claim 20 is the sole remaining claim.

The Applicants have amended Claim 20 to recite that the collectors associated with the negative electrodes consist of copper without a nickel coating. Support may be found in the Applicants' specification in paragraphs [0016] and [0017] wherein paragraph [0016] states that the collectors of the negative electrodes "consist of copper in most cases." Then, in paragraph [0017], the specification recites that the copper is "preferably coated with nickel." This means that the copper does not need to be coated with nickel and therefore can consist of copper without a nickel coating. Entry into the official file is respectfully requested.

The Applicants submit this Response together with a Request for Continued Examination to facilitate entry of the above cancellations and amendments into the official file, consideration on the merits and passage of Claim 20 to allowance.

Claims 10-17 and 19-20 stand rejected under 35 USC §103 over the combination of US '906 and US '608 with US '938. The Applicants respectfully submit that the rejection is now moot with respect to cancelled Claims 10-17 and 19.

The Applicants respectfully submit that even if one skilled in the art were to combine US '906 and US '608 with US '938, the resulting structure would still be different from the teachings of the secondary and primary references. Details follow.

The rejection frankly acknowledges that US '938 does not explicitly teach coating the copper foils with nickel. The Applicants agree. Thus, the rejection turns to US '608 for the teaching that the copper can include nickel plated copper and US '906 for the teaching of a nickel layer formed on one or both sides of the copper layer. Thus, the rejection concludes that it would have been obvious

to “make an electrode element (US ‘938’s teaching) utilizing the nickel plated copper electrodes (US ‘608’s teaching)” with the motivation to make that combination based on forming a completed product “excellent in corrosion resistance.” There are, however, several problems with the combination.

First, the Applicants note that US ‘906 relates to copper foil for printed circuits. There is no mention of batteries and no mention of electrodes in that disclosure. Hence, one skilled in the art would not look to that disclosure for guidance in providing appropriate corrosion protection in the context of the claimed voltaic elements.

In any event, assuming *arguendo* that one skilled in the art would indeed look to US ‘906, the teachings of US ‘906 would lead one skilled in the art to produce a voltaic element, even when taken in conjunction with the teachings of US ‘608, utilizing copper electrodes plated with nickel. Specifically, the Applicants respectfully submit that one skilled in the art, having obtained the suggestion from US ‘608 and US ‘609 to utilize “the nickel plated copper electrodes,” would apply nickel plating to the copper electrode components of US ‘938. Thus, if the above combination is applied to the Applicants’ voltaic element as shown in Fig. 1, the nickel plating would be applied to the copper diverters and the copper collectors, which comprise the electrodes of US ‘938, to provide the “excellent corrosion resistance” taught by the nickel plating of US ‘608 and US ‘906. This is logical inasmuch as the Applicants’ diverters 4, 5 are directly attached to and overlap with the Applicants’ collectors 2, 3 as shown in the Applicants’ Fig. 1 and, as the collectors are in direct contact with both the electrolyte and the electrochemically active materials of the electrode, they are therefore susceptible to corrosion as well. Hence, it would intuitively not make sense to merely apply nickel plating only to the diverters 4, 5 and not the collectors 2, 3.

However, the Applicants defied ordinary logic and defied the teachings of US ‘608 and US

'906. Instead, they limit the nickel plating to the copper diverters 4,5 and avoid plating the copper collectors 2, 3 as shown in Fig. 1 so that the collectors "consist of copper without an Ni coating" as recited in Claim 20.

Said differently, the Applicants respectfully submit that the secondary references, US '608 and US '906, would motivate one skilled in the art to employ the nickel plating on essentially all of the copper surfaces of US '938 that are exposed to a corrosive atmosphere/environment. In the Applicants' structure, that would include the diverters and the collectors. Instead, the Applicants took a very different approach and only applied the nickel plating to the diverters, but not the collectors. The Applicants therefore respectfully submit that the secondary references actually lead those skilled in the art away from the claimed subject matter. Given such teachings away from the claimed subject matter, the Applicants respectfully submit that Claim 20 is anything but obvious over the combination. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicants

TDC/vp
(215) 656-3381